



**Before the  
Federal Communications Commission  
Washington, D.C. 20554**

In the Matter of	)	
	)	
Expanding Flexible Use of the	)	WT Docket No. 20-443
12.2-12.7 GHz Band	)	
	)	
Expanding Flexible Use in Mid-Band	)	GN Docket No. 17-183
Spectrum Between 3.7-4.2 GHz	)	

**REPLY COMMENTS OF THE GIGABIT LIBRARIES NETWORK**

The Gigabit Libraries Network (GLN) respectfully offers these reply comments in response to the Commission’s Notice of Proposed Rulemaking examining how best to utilize mid-band spectrum between 12.2-12.7 GHz (the “12 GHz band”) without causing harmful interference to incumbent licensees in the band.<sup>1</sup> The Commission has rightly recognized the public interest benefits existing investments from incumbent licensees can bring to rural and underserved communities.<sup>2</sup> GLN is seeing those benefits directly. We agree with commenters that urge the Commission not to make changes to the 12 GHz band at this time. We urge the Commission not to risk the benefits of 12 GHz-based services, including LEO satellite services, through introduction of unproven technologies capable of causing harmful interference to incumbent services that were developed over a period of many years and after very significant investment.

**The Mission of the Gigabit Libraries Network**

The Gigabit Libraries Network (GLN) is an open collaboration of tech savvy, innovation libraries cooperating as a distributed global testbed/showcase environment for high performance applications and equipment in the service of educational, civic and cultural objectives. Its mission is to build upon “Fiber to the Library” initiatives to recognize libraries as the most natural community ICT hubs while also championing the highest global standards of free, open access to information and expression. GLN supports the widest array of wired and wireless infrastructure deployment and direct connectivity between libraries and neighboring schools, health clinics, community centers and other anchor institutions to increase community access and resilience.

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<sup>1</sup> *Expanding Flexible Use of the 12.2-12.7 GHz Band, et. al.*, Notice of Proposed Rulemaking, WT Docket No. 20-443; GN Docket No. 17-183, FCC 21.13 (Rel. Jan. 15, 2021) (“12 GHz NPRM”).

<sup>2</sup> *Id.*, ¶ 2 (“[T]he Commission values the public interest benefits that could flow from investments made to provide satellite broadband services, particularly in rural and other underserved communities that might be more expensive to serve through other technologies.”).



## Leave 12 GHz Alone

In the *12 GHz NPRM*, the Commission asks for comment on potential changes to the 12 GHz band proposed by the MVDDS 5G Coalition in 2016. Specifically, the Commission seeks comment on whether it could add “a new or expanded terrestrial Mobile allocation in the 12 GHz band without causing harmful interference to incumbent licensees.”<sup>3</sup> As many commenters noted, whether protection from harmful interference can be achieved is unproven at this time.<sup>4</sup> Moreover, one of the premises of the MVDDS 5G Coalition petition – that the Non-Geostationary-Satellite Orbit Fixed Satellite Service (NGSO FSS) allocation is “unused” – is not correct.<sup>5</sup> GLN’s most recent initiative demonstrates the availability of NGSO FSS services today.

Libraries are, as ever, doing their best to help community members of any age and at any stage of education to get online. They lead the nation in assuring access to public information and services, including the open internet. According to data from the American Library Association, 100% of public libraries offer internet access, with 98% offering free public Wi-Fi services.<sup>6</sup> Libraries often are the sole source of no-fee public internet access in a community. However, libraries can sometimes struggle to find sufficient bandwidth, especially in rural areas to serve their community’s needs.

The Gigabit Libraries Network has worked for years to ensure universal public access **To and Through** public libraries and other anchor institutions. First advocating fiber **To** the library in 2007, and gigabit fiber to all community anchors in collaboration with the Schools, Health and Libraries Broadband Coalition to become a national goal of the 2010 National Broadband Plan. Then promoting access **Through** the libraries using early unlicensed “do-it-yourself” (“DIY”) wireless technologies in the TV bands to provide critical library Wi-Fi access in new neighborhood locations since 2013.

Since 2018, GLN has embraced and funded projects that utilize a range of wireless technologies and service models to provide maximum flexibility for each community to create locality-specific solutions that fit unique circumstances and needs. These projects included use of CBRS, EBS and 5/6 GHz technologies as DIY systems or as partnerships with other area anchors like schools or with commercial providers. GLN advocates for whatever works to serve patrons and students in the hardest to reach and serve areas.

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<sup>3</sup> *12 GHz NPRM* at ¶ 2.

<sup>4</sup> See, e.g., Comments of the Dynamic Spectrum Alliance, at 3 (“[T]he record developed in response to the MVDDS 5G Coalition petition did not include specific proposals on how the addition of a new or expanded terrestrial Mobile allocation ... will protect incumbent licensees from receiving harmful interference.”).

<sup>5</sup> See *12 GHz NPRM* at ¶ 12. The second major premise is that additional allocations are “urgently needed” for 5G deployment. As the *12 GHz NPRM* explains, in the five years since the MVDDS 5G Coalition’s 2016 filing, the FCC has moved to make additional spectrum available for 5G services. *Id.* at ¶ 14.

<sup>6</sup> <http://www.ala.org/news/state-americas-libraries-report-2019/public-libraries>.



## **“LEO Libraries”**

Through the capabilities of the 12 GHz band, GLN is pursuing an exciting new wireless solution for libraries. Recently, GLN entered into an agreement with SpaceX (Starlink) to outfit several small rural public libraries as “beta enterprise” users of its low earth orbit (LEO) satellite broadband system.<sup>7</sup> Under the agreement, Starlink will deliver initial beta service to the libraries (dubbed “LEO Libraries”) through its NGSO FSS license.

Implementation of this LEO technology appears to be yielding faster connection speeds with lower latency than traditional geostationary satellite based services. With LEO services, libraries potentially will have not only a new internet access technology but also a new infrastructure model. Traditional infrastructure economics says that the cost of infrastructure, and therefore the services they enable, increases with distance from the core network. With LEO satellites in the 12 GHz band, the cost of delivery is the same almost irrespective of location. The cost to deliver broadband in downtown Chicago is the same as for the first beta LEO Library in remote Torreón, NM.

While many questions remain to prove the viability of these LEO satellite systems, now is the exact right time to put that to the test. Any action to introduce new or expanded terrestrial mobile services could cause interference with these systems and, at a minimum, would cast a shadow on NGSO FSS technologies that could impede the expansion of its availability and unique capability to connect the least served community anchors with high performance broadband. For these reasons, GLN submits that now is the wrong time to make changes in the 12 GHz band.

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<sup>7</sup> The announcement of this arrangement is attached as Exhibit 1. See also <http://giglibraries.net/LEOLibraries>.



Respectfully Submitted,

Gigabit Libraries Network

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